

Claims

What is claimed is:

1. A method of manufacturing a touch sensor, comprising:
5 providing a substrate having a resistive touch region;
providing a tape strip with a plurality of devices, each of the devices having first and second terminals and being configured to allow electrical current conduction from the first terminal to the second terminal in a first state, and prevent electrical current conduction from the second terminal to the first terminal in a second state;
10 and
securing the tape strip along an edge of the resistive touch region, wherein one of the first and second terminals of the devices are in electrical contact with the resistive touch region.
2. The method of claim 1, further comprising securing an electrically
15 conductive lead to the other of the first and second terminals.
3. The method of claim 1, wherein the devices are surface mounted devices.
4. The method of claim 1, wherein the devices are thin-film devices.
5. The method of claim 4, wherein each of the devices comprises at least
20 one layer of conductive polymer.
6. The method of claim 1, wherein the tape strip is bonded to the substrate.

7. The method of claim 1, wherein the resistive touch region comprises a resistive layer, the touch sensor further comprising a coversheet disposed over the resistive touch region.

8. The method of claim 1, wherein the resistive touch region comprises a resistive layer and a dielectric layer disposed over the resistive layer.

9. A method of manufacturing a touch sensor, comprising:
providing a substrate having a resistive touch region with first and second oppositely disposed edges and third and fourth oppositely disposed edges;
providing four tape strips, each with a plurality of devices, each of the devices having first and second terminals and being configured to allow electrical current conduction from the first terminal to the second terminal when in a first state, and prevent electrical current conduction from the second terminal to the first terminal when in a second state;

securing two of the tape strips along the respective first and third edges of the resistive touch region, wherein the second terminals of the devices of the two tape strips are in electrical contact with the resistive touch region; and

securing the other two of the tape strips along the respective second and fourth edges of the resistive touch region, wherein the first terminals of the devices of the other two tape strips are in electrical contact with the resistive touch region.

10. The method of claim 9, further comprising:
electrically coupling at least one electrically conductive lead to the first terminals of devices not connected to the touch region; and
electrically coupling at least another electrically conductive lead to the second terminals of devices not connected to the touch region.

11. The method of claim 9, wherein the devices are surface mounted devices.
12. The method of claim 9, wherein the devices are thin-film devices.
13. The method of claim 12, wherein each of the devices comprises at
5 least one layer of conductive polymer.
14. The method of claim 9, wherein tape strips are bonded to the substrate.
15. The method of claim 9, wherein the tape strips are cut from a tape reel.
16. The method of claim 9, wherein the tape strips are cut from a single
10 tape reel.
17. The method of claim 9, wherein the tape strips are cut from a sheet.
18. The method of claim 9, wherein the resistive touch region comprises a resistive layer, the touch sensor further comprising a coversheet disposed over the resistive touch region.
- 15 19. The method of claim 9, wherein the resistive touch region comprises a resistive layer and a dielectric layer disposed over the resistive layer.
20. Reversible diode tape, comprising:
a first electrically insulative layer;
a layer of spaced apart anodes disposed on the first electrically insulative
20 layer;
a p-type semiconductor layer disposed on the anode layer;
an n-type semiconductor layer disposed on the p-type semiconductor layer;

a layer of spaced apart cathodes disposed on the n-type semiconductor layer, wherein the cathodes are substantially aligned with the anodes to discretely form diodes; and

a second electrically insulative layer disposed on the cathode layer.

5 21. The tape of claim 20, further comprising:

a layer of exposed anode terminals respectively disposed on the anode layer;

and

a layer of exposed cathode terminals respectively disposed on the layer of cathodes.

10 22. The tape of claim 21, wherein the tape has opposite edges, and the anode and cathode terminals respectively extend along the opposite tape edges.

23. The tape of claim 20, further comprising:

a first electrically conductive trace connecting the anodes; and

a second electrically conductive trace connecting the cathodes.

15 24. The tape of claim 20, wherein the p-type and n-type semiconductor layers are composed of a conductive polymer.

25. The tape of claim 24, wherein the p-type semiconductor layer is composed of doped polythiophene, poly (3,4-ethylenedioxythiophene)-poly(4-styrenesulfonate).

20 26. The tape of claim 25, wherein the n-type semiconductor layer is composed of doped poly(2-methoxy, 5-(2'-ethyl-hexyloxy)-1, 4-phenylene vinylene).